

WHAT IS CLAIMED IS:

- 5 *Sub a1*
1. A method of managing a data transmission load in a communication network;
said method comprising:
 - receiving transmitted data at a data transmission load manager;
 - determining a current data transmission load capacity at each of a plurality of data communication processors;
 - identifying a network transaction to which said transmitted data is related;
 - executing a hash function in accordance with said identifying; and
 - 10 distributing said transmitted data to a selected one of said plurality of data communication processors in accordance with said determining and said executing.
 - 15 2. The method of claim 1 wherein said receiving includes providing said data transmission load manager with a network address representative of said plurality of data communication processors.
 3. The method of claim 1 wherein said identifying includes examining said transmitted data to ascertain an intended recipient.
 4. The method of claim 3 wherein said examining includes determining a transaction identification value associated with said transmitted data.
 - 20 5. The method of claim 1 further comprising:
 - providing results of said executing to a modulo function; and
 - computing a modulo value representative of one of said plurality of data communication processors;
 - wherein said distributing is further in accordance with said
 - 25 computing.
 6. The method of claim 4 wherein said determining includes accepting, at said data transmission load manager, one or more load status signals from each of said plurality of data communication processors.
 7. The method of claim 6 wherein said distributing is responsive to said
 - 30 transaction identification value and said one or more load status signals.

Al

8. A data transmission load management system comprising:
a plurality of data processors; and
a load manager operative to distribute incoming data to a selected one
of said plurality of data processors in accordance with a current data
transmission load capacity at each of said plurality of data processors
and further in accordance with a network transaction with which said
data packet is associated.
9. The system of claim 8 wherein said load manager is provided with a network
address representative of said plurality of data processors.
10. The system of claim 8 wherein said load manager is a computer server.
11. The system of claim 10 wherein each of said plurality of data processors is an
independent computer server.
12. The system of claim 8 wherein said load manager comprises a hash function
providing output associated with said incoming data in accordance with said
network transaction.
13. The system of claim 12 wherein said load manager comprises means for
identifying an intended recipient of said incoming data and for supplying
information related to said intended recipient to said hash function.
14. The system of claim 12 wherein said load manager comprises a function to
modulo said output over said plurality of data processors.
15. The system of claim 12 wherein said load manager receives load capacity
signals from each of said plurality of data processors.
16. The system of claim 15 wherein said load manager distributes said incoming
data responsive to said load capacity signals and said output.
17. A computer readable medium encoded with data and computer executable
instructions for managing a data transmission load in a communication
network; the data and instructions causing a computer executing the
instructions to:
receive transmitted data at a data transmission load manager;

identify a network transaction to which said transmitted data is related;

determine a current data transmission load capacity at each of a plurality of data communication processors;

5 execute a hash function providing output in accordance with said network transaction; and

 distribute said transmitted data to a selected one of said plurality of data communication processors in accordance with said current data transmission load capacity and said output of said hash function.

10 18. The computer readable medium of claim 17 further encoded with data and instructions, further causing an apparatus to provide said data transmission load manager with a network address representative of said plurality of data communication processors.

15 19. The computer readable medium of claim 17 further encoded with data and instructions, further causing an apparatus to identify an intended recipient of said transmitted data.

20. The computer readable medium of claim 17 further encoded with data and instructions, further causing an apparatus to determine a transaction identification value associated with said transmitted data.

20 21. The computer readable medium of claim 20 further encoded with data and instructions, further causing an apparatus to distribute every data packet having a particular transaction identification value to a selected one of said plurality of data communication processors.

25 22. The computer readable medium of claim 17 further encoded with data and instructions, further causing an apparatus to:

 provide said output to a modulo function;

 compute a modulo value representative of one of said plurality of data communication processors; and

 distribute said transmitted data in accordance with said modulo value.

FILED 2020

ai

2000-04-06

a

23. The computer readable medium of claim 17 further encoded with data and instructions, further causing said data transmission load manager to accept a load status signal from each of said plurality of data communication processors.
- 5 24. The computer readable medium of claim 23 further encoded with data and instructions, further causing an apparatus to analyze each said load status signal to determine relative residual processing capacity for each of said plurality of data communication processors.
- 10 25. A data transmission load management system for use in a packet-switched communications network; said system comprising:
- a plurality of data processors; and
- a load manager operative to distribute an incoming data packet to a selected one of said plurality of data processors; said load manager comprising:
- 15 load determining means for determining current data transmission load capacity at each of said plurality of data processors;
- transaction identifying means for identifying a network transaction with which said data packet is associated; and
- data distribution means for distributing an incoming data packet to a selected one of said plurality of data processors responsive to said
- 20 load determining means and said transaction identification means.
26. The system of claim 25 wherein said load manager is provided with a network address representative of said plurality of data processors.
27. The system of claim 25 wherein said load determining means is responsive to
- 25 load capacity signals from each of said plurality of data processors.
28. The system of claim 25 wherein said transaction identifying means is responsive to a transaction identification value associated with said data packet.

Al

29. The system of claim 28 wherein said load manager distributes every data packet having a particular transaction identification value to a selected one of said plurality of data processors.
30. The system of claim 25 wherein said load manager further comprises a hash function providing output associated with said data packet in accordance with said network transaction.
31. The system of claim 30 wherein said load manager further comprises a function to modulo said output over said plurality of data processors.
32. A packet-switched data communication network comprising:
 - a plurality of data processors; each of said plurality of data processors having processing capacity, executing data transmission processing tasks, and forwarding data packets to one or more intended recipients; and
 - a load manager; said load manager operative to identify a network transaction with which transmitted data packets are associated, to receive signals from each of said plurality of data processors related to said processing capacity, and to distribute said data packets to a selected one of said plurality of data processors in accordance with said processing capacity and further in accordance with said network transaction.
33. The packet-switched data communication network of claim 32 wherein said load manager is provided with a network address representative of said plurality of data processors.
34. The packet-switched data communication network of claim 32 wherein said load manager is a computer server.
35. The packet-switched data communication network of claim 34 wherein each of said plurality of data processors is an independent computer server.
36. The packet-switched data communication network of claim 32 wherein said load manager comprises a hash function providing output for each of said transmitted data packets in accordance with said network transaction.

37. The packet-switched data communication network of claim 36 wherein said load manager comprises a function to compute the modulo of said output over said plurality of data processors.
38. The packet-switched data communication network of claim 37 wherein said load manager distributes said data packets responsive to said processing capacity and said modulo.
39. The packet-switched data communication network of claim 32 wherein said load manager distributes said every data packet associated with a particular network transaction to a selected one of said data processors.